

*The
Connecticut
Agricultural
Experiment
Station,
New Haven*

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no. 86

Cholesterol Content of Eggs Produced in Connecticut

BY LESTER HANKIN, LUCIA McLEAN
AND KENNETH VEIT

'AUG 1' 8' 1988'

*Bulletin 864
October 1988*

A cooperative study by The Connecticut
Agricultural Experiment Station and the
Marketing Division of the Connecticut
Department of Agriculture



The Connecticut Agricultural Experiment Station,

founded in 1875, is the first experiment station in America. It is chartered by the General Assembly to make scientific inquiries and experiments regarding plants and their pests, insects, soil and water, and to perform analyses for State agencies. The laboratories of the Station are in New Haven and Windsor; its Lockwood Farm is in Hamden. Single copies of bulletins are available free upon request to Publications; Box 1106; New Haven, Connecticut 06504.

ISSN 0097-0905

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Eggs provide many nutrients for adults as well as children. In fact, egg protein has been the standard by which other protein is evaluated (2). Consumption of eggs, however, has declined because consumers know that eggs contain cholesterol, which has been associated with heart problems in some people. They also know that eggs are not the only source of cholesterol. Dairy foods, meat, and even fish contain this material (1).

The amount of cholesterol in eggs has generally been reported as 274 mg (milligrams) per 50 grams (a large egg) of edible portion (1). This value of 274, listed by the USDA in Bulletin Number 8 (1), has been accepted for years, and is still cited (2). Lately, scientists including ourselves have questioned this value as too high and attribute it to inferior testing procedures used 10 to 20 years ago.

Recently a Pennsylvania firm advertised and marketed eggs as containing only 210 mg of cholesterol (later advertised as 195 mg) per 50 grams of edible portion. They labeled their eggs as "lowered cholesterol", comparing it to the USDA 274 mg value. Sales of eggs produced in Connecticut were affected.

If better testing procedures are the reason their eggs are low in cholesterol, then eggs produced in Connecticut should contain the same lower levels, since cholesterol does not vary significantly with breed, age of hen, or usual commercial diet (2,3).

In this Bulletin we report the cholesterol content of eggs produced in Connecticut and tested by current procedures.

METHODS

Nest run eggs were supplied by egg producers in Connecticut from July through

August 1988. Eggs were refrigerated after collection. Cholesterol was tested by AOAC methods (4) using a gas chromatograph equipped with an OV-17 column and FID detector. Six eggs, selected at random from each dozen supplied, were tested. After blending the eggs, duplicate analyses were made. The average difference between duplicates was 4.4 ± 4.0 mg cholesterol.

RESULTS AND DISCUSSION

Forty-five samples of eggs produced in Connecticut were tested for cholesterol content. These eggs represented 15 different producers, 38 different coops, and nine varieties or breeds of hen.

The data in Table 1 show the cholesterol content of each sample and the age of the hens. The average cholesterol content of the 45 samples was 201 ± 15.2 mg per 50 grams edible portion. Statistical analysis showed that all samples were within two standard deviations of this average cholesterol content, indicating that eggs produced in Connecticut are uniform. Hens were from 22 to 128 weeks old. No correlation between cholesterol content and age of hen was noted.

As a comparison, three dozen eggs from Pennsylvania advertising lower cholesterol content were tested. One sample claimed 210 mg and two claimed 195 mg cholesterol per 50 grams edible portion. These claims were substantiated and the average of the three samples was 200 mg. Sixty-nine percent of the Connecticut eggs tested were below 210 mg and over 50% were equal to or less than 195 mg.

Thus, our data indicate that the 274 mg level published by the USDA (1) is about

27 percent too high on average for Connecticut grown eggs.

Therefore, consumers in Connecticut should now be aware that eggs produced in Connecticut are generally equal to or less than the cholesterol content of eggs advertised as being lower in cholesterol.

ACKNOWLEDGMENT

We thank Connecticut egg producers for supplying samples and Lois Hornig for technical assistance.

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THE AUTHORS

Lester Hankin is chief chemist and Lucia McLean is an analytical chemist at The Connecticut Agricultural Experiment Station, New Haven and Kenneth Veit is chief of the Marketing Division of the Connecticut Department of Agriculture, Hartford.

TABLE 1--CHOLESTEROL CONTENT PER 50 GRAM EDIBLE PORTION OF EGGS PRODUCED IN CONNECTICUT

Sample number	Cholesterol, mg	Hen age, weeks
1	172	32
2	172	27
3	173	26
4	178	76
5	180	46
6	183	39
7	184	33
8	186	38
9	188	50
10	190	36
11	191	104
12	192	50
13	192	40
14	192	61
15	193	22
16	195	72
17	197	24
18	198	62
19	198	78
20	199	43
21	199	39
22	200	60
23	200	40
24	202	27
25	203	66
26	204	76
27	204	33
28	205	31
29	205	88
30	208	55
31	209	72
32	212	84
33	213	52
34	213	62
35	213	70
36	215	128
37	215	69
38	216	93
39	217	57
40	217	48
41	221	125
42	222	46
43	228	64
44	228	20
45	232	92



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